

WHAT IS CLAIMED IS:

- 1 1. A method for making switch-based C/I measurements for a wireless
- 2 network including a plurality of cell sites, comprising steps of:
 - 3 (a) designating a first cell site of the plurality of cell sites as a cell-under-test
 - 4 (CUT) site, and sectors of other cell sites as measurement sectors;
 - 5 (b) configuring a set of system-unique analog frequencies and a set of
 - 6 system-unique DCCH frequencies corresponding to the CUT site;
 - 7 (c) broadcasting from the CUT site carrier signals at the set of system-
 - 8 unique analog frequencies and interference signals at the set of system-unique
 - 9 DCCH frequencies;
 - 10 (d) measuring downlink signal strengths of the carrier signals at mobile
 - 11 stations located within an area serviced by the CUT site;
 - 12 (e) measuring signal strengths of the interference signals within areas
 - 13 serviced by the measurement sectors;
 - 14 (f) recording the signal strengths of the carrier and interference signals
 - 15 measured in steps (d) and (e); and
 - 16 (g) designating another cell site of the plurality of cell sites as the CUT site
 - 17 and repeating steps (b) through (f).

- 1 2. The method of claim 1, wherein:
 - 2 the CUT site comprises a plurality of CUT sectors;

3 the set of system-unique analog frequencies comprises a plurality of
4 different analog frequencies, each one of the plurality of different analog
5 frequencies uniquely corresponding to one of the plurality of CUT sectors;
6 the set of DCCH frequencies comprises a plurality of different DCCH
7 frequencies, each one of the plurality of different DCCH frequencies uniquely
8 corresponding to one of the plurality of CUT sectors; and
9 the step of measuring downlink signal strengths of the carrier signals
10 comprises measuring a signal strength of a selected one of the plurality of different
11 analog signals corresponding to the CUT sector serviced by the measuring mobile
12 station.

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1 3. The method of claim 1, further comprising the step of repeating steps (b)-(g)
2 until each one of the plurality of cell sites has been designated as the CUT site.

1 4. The method of claim 1, wherein the step of measuring signal strength
2 further comprises measuring downlink signal strength of the interference signals
3 via a plurality of mobile stations serviced by the plurality of measurement sectors.

1 5. The method of claim 1, wherein the step of measuring signal strength
2 further comprises measuring uplink signal strength of the interference signals via
3 a plurality of base stations associated with the plurality of measurement sectors.

1 6. The method of claim 1, wherein the step of configuring system-unique
2 DCCH frequencies further comprises the steps of:
3 removing DCCH frequencies from service in the wireless network;
4 retuning the removed DCCH frequencies to the system-unique DCCH
5 frequencies;
6 restoring the system-unique DCCH frequencies to service in the wireless
7 network; and
8 executing an operational script that prohibits mobile stations in the
9 wireless network from using the system-unique DCCH frequencies for voice
10 communication.

1 7. The method of claim 6, wherein executing the operational script further
2 comprises modifying a channel set list, a mobile-assisted handoff list, and an
3 interfering neighbor list.

1 8. The method of claim 1, further comprising the step of generating a plurality
2 of carrier signal strength to interference signal strength ratios to build a switch-
3 based C/I matrix.

1 9. The method of claim 8, wherein generating a plurality of carrier signal
2 strength to interference signal strength ratios further comprises generating
3 average carrier signal strength to average interference signal strength ratios based
4 upon a statistical analysis of the carrier signals and interference signals.

- 1 10. An electronic-readable medium having embodied thereon a program, the
2 program being executable by a machine to perform a method for making switch-
3 based C/I measurements for a wireless network including a plurality of cell sites,
4 the method comprising steps of:
- 5 (a) designating a first cell site of the plurality of cell sites as a cell-under-test
6 (CUT) site, and sectors of other cell sites as measurement sectors;
- 7 (b) configuring a set of system-unique analog frequencies and a set of
8 system-unique DCCH frequencies corresponding to the CUT site;
- 9 (c) broadcasting from the CUT site carrier signals at the set of system-
10 unique analog frequencies and interference signals at the set of system-unique
11 DCCH frequencies;
- 12 (d) measuring downlink signal strengths of the carrier signals at mobile
13 stations located within an area serviced by the CUT site;
- 14 (e) measuring signal strengths of the interference signals within areas
15 serviced by the measurement sectors;
- 1 (f) recording the signal strengths of the carrier and interference signals
2 measured in steps (d) and (e); and
- 3 (g) designating another cell site of the plurality of cell sites as the CUT site
4 and repeating steps (b) through (f).

1 11. The electronic-readable medium of claim 10, wherein the method
2 further includes a step of repeating steps (b)-(g) until each one of the plurality of
3 cell sites has been designated as the CUT site.

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1 12. The electronic-readable medium of claim 10, wherein the step of measuring
2 signal strength further comprises measuring downlink signal strength of the
3 interference signals via a plurality of mobile stations serviced by the plurality of
4 measurement sectors.

1 13. The electronic-readable medium of claim 10, wherein measuring signal
2 strength further comprises the step of measuring uplink signal strength of the
3 interference signals via a plurality of base stations associated with the plurality of
4 measurement sectors.

1 14. The electronic-readable medium of claim 10, wherein the step of configuring
2 system-unique DCCH frequencies further comprises the steps of:
3 removing DCCH frequencies from service in the wireless network;
4 retuning the removed DCCH frequencies to the system-unique DCCH
5 frequencies;
6 restoring the system-unique DCCH frequencies to service in the wireless
7 network; and

8 executing an operational script that prohibits mobile stations in the
9 wireless network from using the system-unique DCCH frequencies for voice
10 communication.

1 15. The electronic-readable medium of claim 10, further comprising the step of
2 generating a plurality of carrier signal strength to interference signal strength
3 ratios to build a switch-based C/I matrix.

1 16. A system for making switch-based C/I measurements for a wireless
2 network, comprising:

3 a CUT site configured to broadcast carrier signals at system-unique analog
4 frequencies and interference signals at system-unique DCCH frequencies;

5 a plurality of mobile stations configured to receive, measure, and transmit
6 signal strengths of the carrier signals and the interference signals; and

7 a plurality of measurement sectors configured to receive the transmitted
8 signal strengths.

1 17. The system of claim 16, wherein a measurement sector of the plurality of
2 measurement sectors is configured to receive the transmitted interference signal
3 strengths from a first set of mobile stations of the plurality of mobile stations
4 located within an area serviced by the measurement sector.

1 18. The system of claim 16, wherein each measurement sector of the plurality of
2 measurement sectors is configured to receive and measure the interference signals
3 broadcast by the CUT site.

1 19. The system of claim 16, wherein the CUT site is configured to receive the
2 transmitted carrier signal strengths from a second set of mobile stations of the
3 plurality of mobile stations located within an area serviced by the CUT site.

1 20. The system of claim 16, further comprising a processor configured to receive
2 the signal strengths from the plurality of measurement sectors, the CUT site, and
3 additional CUT sites, and to generate a switch-based C/I matrix.

1 21. The system of claim 20, wherein the processor is further configured to
2 perform a statistical analysis on the signal strengths to generate the switch-based
3 C/I matrix.

1 22. A system for making switch-based C/I measurements for a wireless network
2 including a plurality of cell sites, comprising:
3 means for designating a first cell site of the plurality of cell sites as a cell-
4 under-test (CUT) site, and sectors of other cell sites as measurement sectors;
5 means for configuring a set of system-unique analog frequencies and a set
6 of system-unique DCCH frequencies corresponding to the CUT site;

7 means for broadcasting from the CUT site carrier signals at the set of
8 system-unique analog frequencies and interference signals at the set of system-
9 unique DCCH frequencies;

10 means for measuring downlink signal strengths of the carrier signals within
11 an area serviced by the CUT site;

12 means for measuring signal strengths of the interference signals within
13 areas serviced by the measurement sectors; and

14 means for recording the signal strengths of the carrier and interference
15 signals measured.

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